

IN THE CLAIMS

The following claim set replaces all prior versions, and listings, of claims in the application:

1. (Original) Flame-retardant superabsorbent polymer (SAP) particles comprising a superabsorbent polymer particle and a dried residue of an aqueous inorganic flame retardant solution.

2. (Original) The SAP particles as in claim 1, wherein the inorganic flame retardant includes at least one phosphorus-containing flame retardant.

3. (Original) The SAP particles as in claim 2, wherein the inorganic flame retardant is at least one selected from the group consisting of phosphoric acid and sodium salt derivatives thereof, phosphorous acid and sodium salt derivatives thereof, ammonium orthophosphate, ammonium hypophosphate, ammonium hydrogen phosphate, ammonium dihydrogen phosphate, ammonium hypophosphite, and ammonium dihydrogen orthophosphate.

4. (Original) The SAP particles as in claim 1, wherein the inorganic flame retardant is present in an amount of between about 1 to about 100 wt.%, based on the total weight of the flame-retardant SAP particles.

5. (Original) A flame-retardant article comprising a cured thermoset resin, and a flame-retardant effective amount of the SAP particles of any one of claims 1-4.

6. (Original) A flame-retardant article comprising a cured thermoset resin, and a flame-retardant effective amount of hydrated superabsorbent polymer (SAP) particles.

7. (Original) The flame-retardant article of claim 6, wherein the hydrated SAP particles consist essentially of SAP particles hydrated with an aqueous flame-retardant solution.

8. (Original) The flame-retardant article of claim 7, wherein the flame-retardant solution consists essentially of water and optionally an inorganic flame retardant.

9. (Original) The flame-retardant article as in claim 7, wherein the flame-retardant solution consists essentially of water and an inorganic flame retardant which includes at least one phosphorus-containing flame retardant.

10. (Original) The flame-retardant article as in claim 9, wherein the inorganic flame retardant is at least one selected from the group consisting of phosphoric acid and sodium salt derivatives thereof, phosphorous acid and sodium salt derivatives thereof, ammonium orthophosphate, ammonium hypophosphate, ammonium hydrogen phosphate, ammonium dihydrogen phosphate, ammonium hypophosphite, and ammonium dihydrogen orthophosphate.

11. (Original) The flame-retardant article as in claim 9 or 10, wherein the inorganic flame retardant is present in an amount of between about 1 to about 500 wt.%, based on the total weight of the flame-retardant SAP particles.

12. (Original) A method of making flame-retardant superabsorbent polymer (SAP) particles comprising hydrating SAP particles with an aqueous inorganic flame-retardant solution.

13. (Original) The method of claim 12, which further comprises drying the hydrated SAP particles to remove water and leave a dried residue of the inorganic flame-retardant solution physically within the SAP particles.

14. (Original) The method of claim 12 or 13, wherein the inorganic flame retardant includes at least one phosphorus-containing flame retardant.

15. (Original) The method of claim 14, wherein the inorganic flame retardant is at least one selected from the group consisting of phosphoric acid and sodium salt

derivatives thereof, phosphorous acid and sodium salt derivatives thereof, ammonium orthophosphate, ammonium hypophosphate, ammonium hydrogen phosphate, ammonium dihydrogen phosphate, ammonium hypophosphite, and ammonium dihydrogen orthophosphate.

16. (Original) The method of claim 15, wherein the inorganic flame retardant is present in an amount of between about 1 to about 500 wt.%, based on the total weight of the flame-retardant SAP particles.

17. (Original) A method of making a cured flame-retardant thermoset resin article comprising the steps of:

- (a) blending a flame-retardant effective amount of hydrated flame-retardant superabsorbent polymer (SAP) particles and an uncured thermoset resin;
- (b) curing the blend of uncured thermoset resin and flame-retardant SAP particles to form the cured flame-retardant thermoset resin article.

18. (Original) The method of claim 17, wherein prior to step (a) there is practiced the step of hydrating SAP particles with an aqueous inorganic flame-retardant solution.

19. (Original) The method of claim 18, which further comprises drying the hydrated SAP particles to remove water and leave a dried residue of the inorganic flame-retardant solution physically within the SAP particles.

20. (Original) The method of claim 19, wherein the inorganic flame retardant includes at least one phosphorus-containing flame retardant.

21. (Original) The method of claim 20, wherein the inorganic flame retardant is at least one selected from the group consisting of phosphoric acid and sodium salt derivatives thereof, phosphorous acid and sodium salt derivatives thereof, ammonium

orthophosphate, ammonium hypophosphate, ammonium hydrogen phosphate, ammonium dihydrogen phosphate, ammonium hypophosphite, and ammonium dihydrogen orthophosphate.

22. (Original) The method of claim 21, wherein the inorganic flame retardant is present in an amount of between about 1 to about 500 wt.%, based on the total weight of the flame-retardant SAP particles.

23. (Original) A flame-retardant thermoset article made by the method of any one of claims 17-22.

24. (New) A flame-retardant article comprising a synthetic resin, and a flame-retardant effective amount of the SAP particles of any one of claims 1-4.

25. (New) The flame-retardant article of claim 24, wherein the synthetic resin is at least one selected from the group consisting of acrylic resins, urethane resins, polyester resins, vinyl esters, epoxy resins, phenol/formaldehyde resins, urea/formaldehyde resins, melamine/formaldehyde resins, alkyd resins and acrylate resins.

26. (New) The flame-retardant article of claim 24, wherein the synthetic resin comprises a crosslinked acrylic resin derived from substituted acrylates.

27. (New) The flame-retardant article of claim 26, wherein the substituted acrylates comprise epoxy acrylates, hydroxy acrylates, isocyanato acrylates, urethane acrylates or polyester acrylates.

28. (New) The flame-retardant article of claim 24, wherein the synthetic resin comprises an acrylate resin crosslinked with at least one of a melamine resin, urea resin, isocyanate resin, isocyanurate resin, carbamate resin or epoxy resin.

29. (New) A method of making a flame-retardant article comprising incorporating into a synthetic resin a flame-retardant effective amount of the SAP particles of any one of claims 1-4.

30. (New) The method of claim 29, wherein the synthetic resin is at least one selected from the group consisting of acrylic resins, urethane resins, polyester resins, vinyl esters, epoxy resins, phenol/formaldehyde resins, urea/formaldehyde resins, melamine/formaldehyde resins, alkyd resins and acrylate resins.

31. (New) The method of claim 29, wherein the synthetic resin comprises a crosslinked acrylic resin derived from substituted acrylates.

32. (New) The method of claim 31, wherein the substituted acrylates comprise epoxy acrylates, hydroxy acrylates, isocyanato acrylates, urethane acrylates or polyester acrylates.

33. (New) The method of claim 29, wherein the synthetic resin comprises an acrylate resin crosslinked with at least one of a melamine resin, urea resin, isocyanate resin, isocyanurate resin, carbamate resin or epoxy resin.